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1 due to the highly saturated subgrade that exists in  
2 the crawlspace.

3 Q Okay. And that's what I was looking for.  
4 One of them is referencing opinion 1 and opinion 2  
5 and opinion 3, I want to have some sort of way to  
6 address those on the record. This part that says,  
7 it is my opinion that the instability of the bricks  
8 was most likely caused by soil movement due to  
9 highly saturated subgrade that exists in the  
10 crawlspace is your opinion 2?

11 A That's correct.

12 Q And opinion 3 is your scope for repairs?

13 A Basically it just says the damage that I  
14 observed could be repaired using standard  
15 construction techniques.

16 Q Now, on this one, is this a -- is this a  
17 scope of repair or is this just saying that you can  
18 use standard construction techniques?

19 A Well, the scope is contained in opinion 3.  
20 It says that the dislodged bricks that I observed,  
21 you know, the dislodged brick supports that I  
22 observed could be repaired using, you know, standard  
23 construction techniques. It goes on to say that  
24 small amount of cosmetic damage on the north and  
25 west walls of the living room, again, is cosmetic

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1 damage. It can be repaired using standard  
2 construction renovation techniques.

3 Q And that's what I'm -- it seems kind of --  
4 this one seems kind of odd to me and I'll tell you  
5 why. This idea that something could be repaired  
6 with standard construction techniques. Would anyone  
7 ever have the opinion that it can be repaired with  
8 standard construction techniques or is there like a  
9 line that's drawn there?

10 MR. ANDREWS: Object to the form.

11 THE WITNESS: Well, the only point was  
12 is that I observed the damage and the repairs are --  
13 the repair processes, the repair techniques that  
14 would be needed to address those issues are  
15 relatively simple, relatively standard type of  
16 techniques. There's not Herculean or unusual  
17 processes or procedures needed to address those  
18 damages that I observed.

19 Q (By Mr. Engel) And within opinion 3 you  
20 provide what the scope of that is?

21 A Well, opinion 3 it says the repair of the  
22 dislodged brick supports, and it goes on. And it  
23 says, a small amount of cosmetic damage on the north  
24 and west walls of the living room. So, I mean,  
25 those are scope-defining issues.

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1 Q Sure. And when you were on scene and you  
2 were writing this report, you understood that Mr.  
3 Battle was going to rely on your scope of repairs  
4 for writing his estimate?

5 A Well, if Mr. Battle was asked to provide an  
6 estimate --

7 Q Sure.

8 A -- then, you know, my comment was to him is  
9 that, hey, there's not Herculean things needed here.  
10 Standard type techniques that you would normally --  
11 normally use are the things that can be used to  
12 address those issues.

13 Q And is it common for you to provide scope  
14 of works to estimators?

15 A Yes.

16 Q Okay. And you know that when you're  
17 saying, jack up a floor structure and reconstruct  
18 masonry supports, that that's something that he's  
19 going to then estimate for; right?

20 A He would know what that means.

21 Q Right. So you're -- this one is kind of  
22 directed -- if someone is going to write an  
23 estimate, then this is what needs to be done as an  
24 engineer; right?

25 A That's correct.

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1           A   Not necessarily. Again, I couldn't see  
2   what they did. And these brick structures may  
3   actually not be original. It's not uncommon to go  
4   in and either due to floors that are too flexible or  
5   somebody wants to put more weight than what the  
6   floor joists were designed for or squeaky floors. I  
7   mean, there's lots of reasons to go in and reinforce  
8   a floor. So I don't know why the brick columns were  
9   installed. You can see that there are brick columns  
10   under some joists, as I said earlier. There's wood  
11   posts under some joists and then there's some joists  
12   that don't have any of those things. In all  
13   probability these brick columns were installed  
14   somewhere after -- or subsequent to the original  
15   construction. So they could have been placed for a  
16   variety of reasons.

17           Q   But like you said -- well, nevermind.  
18   Let's move to number 3. Number 3 is you're  
19   providing -- we've already discussed this, but  
20   you're providing a scope of repairs; right?

21           A   If you're going to repair the brick  
22   columns, you know, go cut holes in the floor and get  
23   down and relay the brick, you know, and repair the  
24   holes.

25           Q   Jack up the floor?

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1           A    Yeah. Bring it back to an elevation that  
2   works with the rest of the floor. You know, a lot  
3   of times in these instances you have to work the  
4   elevations to all of the other adjacent elevations,  
5   so I don't -- I don't necessarily jump to jack it  
6   back up 1.3 inches or 1.1 inches.

7           Q    Sure. So in order to do that, they put  
8   jacks underneath the floor joists?

9           A    Typically you would go in and because of  
10   access, you would go in and cut a hole in the  
11   flooring -- subflooring and go down underneath the  
12   joists and put a foundation -- something that had --  
13   that was big enough to provide appropriate bearing  
14   on the soil. And then actually, there's different  
15   ways to do it. Some people just use car jacks and  
16   put them -- go ahead and jack them up and just leave  
17   the jack there. Some people jack it up and then put  
18   in some type of structural elements and then remove  
19   the jacks. There's lots of different ways to do it.

20          Q    But what you're jacking on -- when you're  
21   using a car jack, for example, you're going to --  
22   the force is going up on the floor joists that are  
23   underneath the home; right?

24          A    Yes. You're jacking against the ground,  
25   but you're pushing up on the bottom side of the

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1 floor joists.

2 Q Do you know if any of these floor joists  
3 are broken underneath this living room?

4 A Based on the -- on the elevation  
5 information contained in the Rimkus report, I think  
6 there's high probability that some of them are  
7 broken due to rot. That's basically what I said.

8 Q And in order to repair those broken floor  
9 joists, if you were going to repair this room, you  
10 would have to actually replace those floor joists;  
11 right?

12 A Typically, you would not. Typically, you  
13 would go in and what we would call sistering them,  
14 depending upon the extent of the rot. It depends  
15 upon some of the details, but effectively you would  
16 go in and remove enough flooring that you could get  
17 a joist that was long enough to sistering is  
18 effective. Just placing a new competent joist next  
19 to the damaged joist. There's lots of details that  
20 have to be worked out and whether you extend that  
21 new sister joist the full length or whether it was  
22 just a partial length and how you attach it.  
23 There's many details associated with that. But  
24 effectively sistering them if they're broken due to  
25 rot.

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1           A    No.  There's a State building code that  
2   provides minimums, okay, and that -- all of the  
3   information contained in that State building code  
4   would permit a properly designed sistering process.  
5   That's -- absolutely.

6           Q    Do you know what that process is? -- the  
7   codes?

8           A    Yes.

9           Q    I mean, do you know what those requirements  
10   are, as far as length, and all of that kind of  
11   stuff?

12          A    That's not the way it works.  Okay?  The  
13   State building code in combination with a whole  
14   bunch of other referenced documents.  Okay?  So the  
15   State building code, depending upon -- this is  
16   probably IRC 2015.  Today -- if you were going to  
17   repair today, it would be IRC or International  
18   Residential Code of 2015.  But that document  
19   contains all sorts of other documents by reference.

20          Q    Right.

21          A    And some of those other documents would be  
22   -- would define the loads that the structure would  
23   have to be designed for.  Those documents define how  
24   to design wood structures, the capacity of nails,  
25   the capacity of screws, the capacities of various

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1 species of wood. And by using the analytical  
2 processes and the design processes that we, as  
3 structural engineers are trained in, you use all of  
4 those codes and reference materials to design a  
5 sistered repair that would be able to resist the  
6 specified loads.

7 Q You would have to have an engineer probably  
8 do that?

9 A Yes, sir.

10 Q But that's not something that you prepared  
11 in this?

12 A No, I did not.

13 Q Okay.

14 A You know, estimators don't have to have all  
15 of the gory details in order to estimate the cost of  
16 doing something. You can -- you know, an estimator  
17 can opine about the cost of -- I don't know whether  
18 you want to, you know, stacking up the brick,  
19 restacking up the brick or sistering or repairing a  
20 brick wall or anything. Without all of the specific  
21 details that would actually be typically provided in  
22 the actual doing or the process of reinforcing  
23 things. So I kind of jumped to a conclusion, but we  
24 didn't -- we didn't design the repairs. Okay?

25 Q Well, I mean, if you were going -- and

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1 A Yes.

2 Q One of the things you mentioned was using  
3 the level on the wall?

4 A Yes.

5 Q Did you do that at this home?

6 A I don't remember. That's typically not the  
7 first thing, second thing or even the third thing  
8 that I do. And based on all of the information that  
9 I had gathered, I honestly don't remember. I  
10 certainly did not record the results of any type of  
11 plumbness measurements that I made in the wall. So  
12 I just don't know.

13 Q Okay. You don't remember if you did?

14 A That's correct.

15 Q Normally if you do that, whether it's a  
16 tornado house or earthquake house, do you take  
17 pictures of the level?

18 A Typically. If the issue is structurally  
19 significant or if there's significant movement, I  
20 would typically -- would typically take pictures of  
21 that wall. And there are no pictures of any kind of  
22 plumbness measurements with the level. I have seen  
23 subsequent pictures somebody provided or made, but I  
24 think -- maybe not. I don't remember. But I did  
25 not make any measurements that I remember. At least

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1 I didn't record them. A four foot level, I go, you  
2 know, it's not the first thing I drag out of the  
3 car.

4 Q And it's still your testimony that you  
5 haven't reviewed any other documents other than the  
6 Smith -- Mr. and Mrs. Smith's deposition after  
7 writing your report?

8 A Any other documents?

9 Q I was just saying that's what you testified  
10 to earlier?

11 A I know. I just -- the only thing that I  
12 can think of -- I mean, I've got my file here and we  
13 can take a look at it. The only thing I can think  
14 of is Mr. Andrews has shown me pictures of something  
15 that occurred during one of the depositions. I  
16 don't know, but I didn't review them as such. I  
17 mean, I've seen the pictures, okay, but -- and I'm  
18 sitting here trying to remember now whether the  
19 plumbness measurement -- or the level on the wall  
20 was maybe part of those -- part of those pictures.  
21 I don't know.

22 Q Right. I'm sorry, go ahead.

23 A But anyway, when you said "reviewed," I go  
24 to actually an analysis of things. He has shown me,  
25 you know, that there were other pictures there, but